

Mirror displacement energies and neutron skins

Tuesday, 11 June 2013 17:15 (30 minutes)

Mirror displacement energies and neutron skins A gross estimate of the neutron skin $[0.80(5) (N-Z)/A \text{ fm}]$ is extracted from experimental proton radii, represented by a four parameter fit, and observed mirror displacement energies (CDE). The calculation of the latter relies on an accurately derived Coulomb energy and smooth averages of the charge symmetry breaking potentials constrained to state of the art values. The only free parameter is the neutron skin itself. The Nolen Schiffer anomaly is reduced to small deviations (rms=127 keV) that exhibit a secular trend. It is argued that with state of the art shell model calculations the anomaly should disappear. Highly accurate fits to proton radii emerge as a fringe benefit.

Primary author: Prof. ZUKER, Andres P. (IPHC Strasbourg)

Presenter: Prof. ZUKER, Andres P. (IPHC Strasbourg)

Session Classification: Session 8